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# EDUCATIONAL

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## DISINFECTION AND PROTECTION IN OUR SCHOOLS

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ALL sanative measures in the schools of our country are questions that, strangely enough, have received little attention. A system fast approaching an unexcelled excellence and eagerly alert for whatever will add to its efficiency has yet passed by its opportunities—nay, its duties—in this regard; and the people, ignorant of their right of safety, have manifested only a quiet submission. The vigor of our school system is beyond question, and equally beyond disputation is the value of protective measures against disease. But that the public school powerfully illustrates the need and value of such measures, that between intellectual development and all that makes for physical perfection there should be a close relation and interaction, this few have realized or acted upon. There is, however, a growing agitation all over our country relative to school hygiene, and here and there one finds substantial beginnings in a scientific inspection, supervision, and instruction that are full of promise and encouragement. The few are thoroughly awakened, with all energies bent to the perfecting of a practical sanative system. It is the unthinking or unwilling majority who must now be won over to the endorsement of the work that the pioneers in the movement are establishing. Careful oversight in all serious transmissible diseases is regarded by everyone as a matter of course. But the constant vigilance and the use of preventive measures in times of apparent safety seem to many useless pother, and any complemental instruction but one of the fads decried as foolish and extravagant. The popular mind must be set to thinking; the need for health measures in the schools must be made clear and emphatic; the telling results already attained must be exploited, and plain methods advocated and put into practice as rapidly as may be. There will be a full awakening to the truth some day, and, meantime, everyone interested must do all he can by word or work to hasten that day's coming.

Disinfection, broadly speaking, is the cleansing from infection or

contagion. It may be, therefore, either by the removal of all source of infection or contagion, or by a process which shall render inert the existing germs of disease. Practically, both methods are but necessary steps in one complete process. When there appears in our schools any communicable disease, not only must the person suffering from that disease be removed from the schools, but the premises must be thoroughly cleansed and all belongings with which, in his diseased condition, he has come in contact must be purified or destroyed. More than this, not only with the appearance or suspicion of disease, but at all times, there must be an intelligent supervision of all sanitary conditions. Certainly all this sounds neither new nor unreasonable, and yet it is just in the carrying out of such a process that the advocates of a careful school sanative system find disheartening apathy or opposition; and the school, college, or academy where disinfection theoretically or practically has a regular place is still undiscovered. Yet who can doubt the need? Fourteen millions of school-children in our country, an average of fifty to sixty in a room, representative of every grade in the social scale and of homes of every degree of unwholesomeness. All these children, their mental powers actively alert, moving, working side by side, in constant contact for from three to six hours of each school-day, handling the same books and apparatus, perhaps using the same towel and tincup. Surely the safety of the whole demands that the schools shall furnish to each individual the same adequate protection he would get in the most carefully guarded home.

Foremost among the auspicious signs is the plan of medical inspection, now recognized as a vigorous branch in the school systems of many of our cities. Of these systems none has done more efficient work or shown more gratifying results than has that of the city of Chicago. It was only in January, 1900, that medical inspection was begun in that city with the appointment of fifty medical inspectors of schools to work under the technical direction of the city Department of Health. These inspectors, all physicians, appointed after rigid competitive examinations, have each apportioned to them a number of schools which they are required to visit daily, examining all pupils referred to them by the school principals as giving evidence of a transmissible disease or who have been absent for four or more consecutive days. Examinations are made for the following diseases: scarlet fever, diphtheria, measles, r  theln, small-pox, whooping-cough, mumps, chicken-pox, tonsillitis, pediculosis, ringworm, or other transmissible diseases of the skin or scalp, and transmissible diseases of the eye. If any of these disorders are found to exist, the child is sent home with a card explaining to the parents the cause of the exclusion. In cases of pediculosis, and these

only, is treatment suggested. All examinations are made as unobtrusively as possible and strict asepsis is observed. For throat examinations wooden tongue depressors are used, one for each person, and then burned. In emergencies, small-pox and the like, emergency inspectors are at once sent out from the central office, who make more detailed examinations, see to the isolation of the child suffering from the disease, to the dismissal of the school, and to the thorough disinfection of the premises. With the resuming of school they also watch carefully among the pupils for any suspicious symptoms, especially in those thought to have been exposed to the disease.

Duration of exclusion in *scarlet fever* is till desquamation has ceased; in *diphtheria*, till throat-culture shows the absence of the Krebs-Löffler bacilli. In *tonsillitis*, a child is excluded on clinical evidence alone, and throat cultures made for further diagnosis.

Reports on the work accomplished by this medical inspection show how immeasurably greater is the safety given by this method to the children of our schools. Referring again to the system in Chicago, we find that from January, 1900, to May of the same year the total number of examinations made was seventy-six thousand eight hundred and five. In four thousand five hundred and thirty-nine cases contagious diseases were detected and excluded.\* And this in only four months. The value of this daily inspection is not merely in the detection of the disease, but in the detection of it at such an early stage that the dangers of conveying it to others are reduced to a minimum. And this early detection is found not only to reduce materially the number of sporadic cases, but also, in a large degree, to prevent epidemics among the school-children. But more than detection and exclusion is necessary to the complete protection of health. Recognizing this fact, departments of school sanitation are working to bring all questions of ventilation, plumbing, lighting, and proper care of the school-rooms for final reference to those who will give to them the most scientific study and careful oversight.

That disinfection in the schools, however, may be brought about by methods other than that of medical inspection is shown by the work of the Board of Health of the State of Michigan—a work that gets down to the very heart of the difficulty, instruction of the masses. In the statutes of the State we find this gratifying requirement: “There shall be taught in every year in every public school in Michigan the principal modes by which each of the dangerous communicable diseases is spread, and the best method for the restriction and the prevention of each such disease. The State Board of Health shall annually send to the public-

\* “Report of Department of Medical Inspection, Chicago Board of Education, 1900.”

school superintendents and teachers throughout this State printed data and statements which shall enable them to comply with this act. School Boards are hereby required to direct such superintendents and teachers to give oral and blackboard instruction, using the data and statements supplied by the State Board of Health.”\* And it is equally gratifying to notice the hearty recognition and encouragement that this law is receiving. To facilitate this work, monthly bulletins on all manner of hygienic subjects are issued to teachers. Among them we notice “Hygiene of the Eyes,” “Michigan Water Supplies,” “Bacteriology in its Relation to Public Health,” “Restriction of Tuberculosis,” and “Discussion of Dangerous Communicable Diseases.” Not only are these means employed in the schools to educate against the indifference of the people, and up to a proper appreciation of the laws of health and sanitation, but bulletins containing valuable information relative to the various communicable diseases are to be had by everyone for the asking. Here we find treated: “Restriction and Prevention of Whooping-Cough,” “Scarlet Fever,” “Small-Pox,” “Diphtheria,” “Meningitis,” “Tuberculosis,” “Measles,” and “Typhoid Fever.” In these papers are set forth the duties of health officers and of those caring for the sick; the need of isolation is emphasized; means and methods of disinfection are explained, and directions given for the care of the convalescent and the burial of the dead. These documents the local health officers are urged to circulate freely wherever there is an outbreak of any of these diseases. What an education this makes possible for the masses! Can anyone adequately estimate the help accomplished for a school or community by these remedial methods that strike at the very source of the disorder? Begun in the schools and supplemented by the intelligent instruction of all classes, they become a tremendous power in the safety of the State.

Medical inspection and supervision of our schools, accompanied by wise instruction—will not this union give us a system perfect in its results and practical in all its methods? Ought this not be the end towards which all efforts should be directed? Is rigid examination of the mind’s capabilities justified, with a total neglect of the condition of the body, or instruction for mental development in every subject, from stringing beads to studying French verse forms, to be found a place for and no provision be made for teaching the simple lessons of how disease and even death may be averted? City schools are giving health-lessons some attention; but to arouse a new enthusiasm, and for the sake of smaller communities where even a lessened need does not justify the total indifference, State Boards of Health will need to see that the necessary

\* Section 4796, “Compiled Laws,” 1897; Section 23, “Public Health Laws,” 1899.

data are furnished, and that the necessary laws are enforced or enacted for regular and suitable instruction.

In the meantime, while these bodies are setting to work, much can still be done to promote the health of school-children. The oversight of this humane task will largely devolve upon the teacher. To be sure, her powers are limited and her duties legion, but no teacher can do the best for her pupils and be ignorant or unmindful of the care and needs of their physical natures. The ignorance of many of our best teachers on all questions influencing health is lamentable. Not only should more in this regard be exacted of teachers by the School Boards, but each teacher should exact more of herself. She should familiarize herself with the laws of health, with the value of the natural disinfectants, air, light, and sun, and the principles of ventilation and of plumbing. She must insist upon a scrupulous cleanliness of the room and of each pupil; lavatories should be made attractive, with plenty of soap and hot and cold water, and enough clean towel space provided for every face and pair of hands; every child should have his own drinking-cup,—and this should be kept clean; the habit of putting pencils to the mouth should be discouraged from the first grades, as also the passing about of whistles, etc.; school-rooms should have thorough scrubblings at least once a month; walls should be carefully swept down, and all dusting done with a damp cloth; at least once a week balustrades, tables, blocks, and all apparatus in general use should be washed with some disinfectant, such as a weak formalin solution; close watch should be kept for skin disorders or diseases of the eyes which are transmissible, as well as for any acute communicable disease, and a physician should be called in or the child sent home at the first intimation of danger; if any child has gone home sick, suspicion pointing to a contagious disease, then the child's seat and desk should at once, pending the diagnosis, be carefully disinfected; provision should be made in the school curriculum for daily lessons on all questions of health. In the higher grades interest will be increased by the study of pathogenic cultures and by microscopic work. If the teacher is not equal to this, there will nearly always be found in any community some physician who will willingly give of his time and research.

Another broad field of opportunity open to the teacher is that of instituting mothers' meetings, where there will be friendly and informal discussions on the questions of food, clothing, ventilation, physical defects, etc., and much kindly, helpful advice given. Some of these innovations may be long in being introduced, and School Boards will be found still clinging to the customs that they by a kind providence have survived. But let a start be made in the right direction. More

often, instead of discouragement, there will be found a pleasing receptivity and a quick adaptation to the new order of things.

Down in a vacation school in the Ghetto district of one of our large cities there are some earnest kindergartners who are busy for no small part of their midsummer term with baths, house-cleaning, and a public agitation generally. It is the old story, of "poverty, rags, and dirt;" but soon lines of demarcation recede and disappear, tumbled locks become untangled, and a clean, white kerchief about the neck or a quaint little apron show the leavening process that is silently at work. From such small beginnings arise great results, and from the teachers is coming the greatest security of health—teachers not only from our public schools, teachers also of morals, of true religion, of all that makes people lead better, more wholesome lives. State Boards of Health and city systems will look to the needs and outline the policy and the work that they have begun; the people, taught by good teachers the value and protection of life and health, will carry it to a successful and perfect completion.

[Miss Hay writes from the stand-point of practical experience, from that of a teacher for some time in a high school, and from that of a trained nurse. It is to be hoped that her very interesting and practical paper may be widely read, and that it may by some means reach the hands of many teachers. It is a further plea for preventive medicine, in the agitation for the use of which the trained nurse should take an active part, and in this connection the thought arises that until such times as teachers do become better acquainted with the laws of health and their application to the needs of school-children, and with the methods for preventing disease, might not the trained nurse's knowledge be made use of by having her on Boards of Education and by having her give courses of instruction at mothers' meetings on food, clothing, ventilation, etc.? In England some advance has been made in these directions, of which mention has already been made in the pages of this Journal.—Ep.]

